Claims

1. An optical amplifier that amplifies signal light in a signal band in a fiber optic transmission system having at least first and second optically pumped signal light gain amplifying stages,

a tilt controller linked to a control unit ,

a optical monitor analyzing signal powers,

wherein the amplified spontaneous emission of the optical amplifier is measured at two extreme wavelengths of the signal band to derive control signals for at least the tilt controller.

2. An optical amplifier according claim 1 wherein the control signals are connected to a variable optical attenuator VOA.

3. An optical amplifier according claim 1 wherein the control signals are connected to a variable attenuation slope compensator VASC.

4. An optical amplifier according claim 1 wherein the first and the second gain stages are doped fiber amplifiers.

5. An optical amplifier according claim 1 wherein the first gain stage is a Raman amplifying stage and the second gain stage amplifier is a doped fiber amplifier.

6. An optical amplifier according claim 1 wherein the output signal of the amplifier is connected to a four-port tap coupler, where one port is linked to Bragg fiber gratings reflecting the extreme wavelengths of ASE noise and one port connected to a wavelength multiplexer separating the wavelengths for a measurement.

7. Communication system with improved amplification and amplifying tilt control comprising at least one optical amplifier according the previous claims.

8. Method for control tilt of a communication system comprising the step:

- Measuring at the output signals of the amplifiers two wavelengths at the extremities of the signal band out of the ASE noise signal,
- Analyzing the measured signals in an optical monitor and
- Feeding back the signals via a control unit at least to a tilt controller
- Adapting the tilt according the measured signals to compensate tilt of amplifier and the line.